

Date: Tue, 18 Oct 94 04:30:23 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: List
Subject: Ham-Ant Digest V94 #349
To: Ham-Ant

Ham-Ant Digest Tue, 18 Oct 94 Volume 94 : Issue 349

Today's Topics:

 1/4 wave 10m vertical
 A3 Cushcraft in the attic
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 Eggbeater antenna plan?
 Ext Ant for RS DX343 SW
 help with mininec!
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 I need help with antenna calculations (2 msgs)
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 Standard mount for mobile radio antennas
 Superior coaxial line?
 Ventenna???
 Verticals, rate them

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 17 Oct 1994 19:05:24 GMT
From: smithson@ACM.ORG
Subject: 1/4 wave 10m vertical

With the sunspots on the low side, and the occasional 10m openings I've
been experiencing the past few weeks, I've been
thinking of putting up a very simple 1/4 wave 10m vertical on the
roof. I thought I'd use a stainless steel whip, some wire for the
grounds. I'd rather not go with a dipole because of few places to support
it, and wind loading at my QTH. 1/4 waves have a fairly high-angle of

radiation, as I recall, what do you think of this for 10m operation? I've been loading my 80m dipole with a tuner for 10m and I've worked southern, CA and Mississippi. I've heard pileups in the Caribbean and Venezuela, but can't get through. I'm not looking for the vertical to punch through the pileups, but will I even be able to hear them with the radiation angle?

Thanks!

n8wrl Brian

Date: Mon, 17 Oct 1994 16:25:16 GMT
From: jholly@cup.hp.com (Jim Hollenback)
Subject: A3 Cushcraft in the attic

JairoE@aol.com wrote:

: I just bought a new house and no antennas are allowed in the area. I have a
: Cushcraft A3, Does anybody have any experience using this antenna inside the
: attic? and How can I ground the antenna?

: Thanks in advance

: JAE

Bigger question, how can you turn it?

Jim, WA6SDM

Date: 17 Oct 1994 14:04:58 -0600
From: lkilgore@xmission.com (Frank PoWell)
Subject: Antenna Patterns

Anyone interested in a program that plots antenna
radiation patterns:

<ftp://xmission.com/pub/users/lkilgore/antennas/antenna.zip>

--
/_/\ I never met a cat | \ /| | Frank PoWell -N7KSK-
(o.o) I didn't like! 0.0 | lkilgore@xmission.com
> - < ___,^..^,,,__ =(__)= | 34302207268 1348335950 1553477097
34511503224059 58589368040489 38795074027384

Date: 17 Oct 1994 10:00:58 GMT
From: etxgill@solsta.ericsson.se (Claes Giljegard TX/DK)
Subject: Eggbeater antenna plan?

Hi and thanks for reading this.

Is there anyone who has a plan for the eggbeater antenna?
Polarisation and gain??

73's de SM4URM / Claes

Date: Mon, 17 Oct 1994 18:30:12 GMT
From: dukstei@ezinfo.ucs.indiana.edu (dukstei)
Subject: Ext Ant for RS DX343 SW

A friend of mine has a Radio Shack DX343 analog portable SW radio and would like to hook up an external antenna. I am worried that this would blow out the front end if a strong signal was tuned in.

Is there some way to prevent this using a resistor inline with the antenna

There is no ext ant jack for this radio.

any suggestions/solutions would be highly welcomed.

oh and..... THANKS

karl

Date: Mon, 17 Oct 1994 11:46:44 EDT
From: Tyler Harpster <TJH112@psuvm.psu.edu>
Subject: help with mininec!

I have a copy of mininec, but no instructions for it's use. could someone please help me with the syntax of the numbers being inputed in the program?

Thanks... Tyler N3SPD

Date: Mon, 17 Oct 1994 14:16:25 GMT
From: zlau@arrl.org (Zack Lau (KH6CP))
Subject: Ice problems on Mountaintop microwave

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: In article <CxJ0vz.FC4@world.std.com> barnaby@world.std.com (Richard L Barnaby)
writes:
: >Our club is in the process of designing a node stack for a
: >mountain-top site in Vermont. We were originally thinking
: >about 440 dedicated links from mountain top to valley concentrator
: >nodes, but were tossing around the idea of using 3.5GHz microwave
: >for (super) bandwidth up to the mountain. We have line of sight

: I have a couple of thoughts. First I have my doubts that a 5" horn
: is sufficient for a 50 mile LOS wideband path with high reliability.

Gary is right, if your signal is 40 MHz wide, even with 2 watts of output power and a 2 dB NF receiver (you can get this NF these days with the \$8 MGA 86576 MMIC. Surplus 3 watt Avantek 5964 IMFETs are easily tuned down to 2304 MHz) you can expect:

122 dB path loss between the two connectors of the antennas (10 dBi)
-96 dBm noise floor (I'll assume the correction for the lower than 290 Kelvin background temperature and feedline loss cancel out)
+33 dBm transmit signal

This is only a signal to noise ratio of 7 dB. You would have to narrow the bandwidth to get a reliable signal. It would do a pretty good job on what the 10 GHz people call wideband voice, which is only 200 kHz wide.

--
Zack Lau KH6CP/1 2 way QRP WAS
 8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

Date: 17 Oct 1994 11:33:44 GMT
From: wvanho@infonet.com (W. E. Van Horne)
Subject: I need help with antenna calculations

Giovanni Moretti (G.Moretti@massey.ac.nz) wrote:

: There was an article in the (now deceased) HAM RADIO magazine many
: years ago called "The Antenna Transmission Line Analog" which discussed
: exactly the question you're asking. It was very readable but
: unfortunately I can't give you an exact reference - it's at home and
: I'm not:-).

: Anyone else remember these articles (as I remember there were two)?

Giovanni-

The article was in two parts: "The Antenna-Transmission Line Analog", by Joseph M. Boyer, 17302 Yukon, Ste. 63, Torrance, CA 90504. They were in HAM RADIO, April and May, 1977.

It is a classic.

I have consulted it very frequently ever since I first saw it!

73, Van - W8UOF

*
* It ain't wot ya don't know 't gets ya into trouble. *
* It's wot ya know 't ain't true. - "Mr. Dooley" *
* *

wvando@infonet.com

Date: Mon, 17 Oct 1994 16:55:53 GMT
From: tomb@lsid.hp.com (Tom Bruhns)
Subject: I need help with antenna calculations

Giovanni Moretti (G.Moretti@massey.ac.nz) wrote:

: There was an article in the (now deceased) HAM RADIO magazine many
: years ago called "The Antenna Transmission Line Analog" which discussed
: exactly the question you're asking. It was very readable but
: unfortunately I can't give you an exact reference - it's at home and
: I'm not:-).

: Anyone else remember these articles (as I remember there were two)?

Author: Joseph Boyer. April and May, 1977, "Ham Radio" magazine. I strongly second Giovanni's recommendation. Total of 18 pages; I'm willing to make a few copies for a SASE and two 29c stamps to cover copy costs.

73, Tom -- K7ITM
tomb@lsid.hp.com

Date: Mon, 17 Oct 1994 20:04:03 GMT
From: zlau@arrl.org (Zack Lau (KH6CP))
Subject: Newbie questions...and then some

Paul Cordingley (paul.cordingley@canrem.com) wrote:

: -> In order to make the transition from "newbie" to "non-newbie", every

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: -> ham learns that steel has unacceptably high resistance at RF (not to
: -> be confused with "radiation resistance"), thus making it a poor
: -> radiator.
: <snip>
: <shuffling noise as yet another newbie sneaks off to the garage to
: put a few things in the trash pile>
: I notice that you use the word 'radiator' rather than 'element'. Does
: the same rule apply to using steel as elements in, say, a yagi?
: In the same vein, the ARRL antenna book says that yagi elements should
: never be "steel, including stainless steel and unprotected brass or
: copper wire" Can anyone explain why this is so? If the yagi is in
: the attic, away from weather, can I use an unprotected metal?
: Finally, assuming similar diameters etc, can I mix a copper radiator
: with non-copper elements in a yagi?
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The text was written by Steve, K1F0, and the context was designing high performance yagis (suitable for EME arrays). Chip, N6CA said his array of loop yagis worked great for EME--till they got noisy and he couldn't hear anymore--but it still worked great for tropo work.

The loss gets worse as you increase the current in the elements. Thus, parasitic elements such as yagis are more vulnerable to resistive losses than phased arrays without mutual coupling.

If you want to use stainless steel, you might consider re-optimizing the designs to better accomodate the increased loss. I remember seeing a commercial 5 element 432 design at Central States--it actually had less gain than a dish feed!

--
Zack Lau KH6CP/1 2 way QRP WAS
 8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

Date: 17 Oct 1994 13:10:09 GMT
From: drumhell@claudette.nrl.navy.mil (David Drumheller)
Subject: Standard mount for mobile radio antennas

Well, now that my car is almost two years old, I'm more willing to drill that hole in the trunk lid, and permanently install a 144/440 mHz. antenna.

Question: What's the industry standard for holes and mounts for mobile

antennas? It appears that the 'NMO' style mount seems to be universal in that I've seen cellular, amateur, scanner, and business band antenna commonly use this mount. Is this true?

-Dave

--

David Drumheller, KA3QBQ phone: (202) 767-3524
Acoustics Division, Code 7140 fax: (202) 404-7732
Naval Research Laboratory
Washington, DC 20375-5350 e-mail: drumhell@claudette.nrl.navy.mil

Date: Mon, 17 Oct 1994 14:32:09 GMT
From: zlau@arrl.org (Zack Lau (KH6CP))
Subject: Superior coaxial line?

Roy W Lewallen W7EL (royle@tekgp4.cse.tek.com) wrote:
: cgwh@chevron.com (Curtis Wheeler):

: >Loss is loss, a decibel is a decibel, whether transmitting or receiving.

: Technically, this is true. But at HF, many decibels can be lost on the
: receiving end without any impact on the signal/noise ratio, while a dB
: lost on the transmitting end will result in a 1 dB decrease in the
: signal/noise ratio. This is because the majority of the system noise is
: caused by the atmosphere and other sources between the transmitting
: and receiving antennas. At VHF and UHF, the noise of the receiver
: dominates, and a dB loss at either end will result in a dB reduction
: in signal/noise ratio.

For a dB to be a dB in terms of signal to noise ratio, you want your noise temperature to be the same as your reference, typically 290 Kelvin. If your background (noise temperature) is much higher, as is the case on HF, the above explanation applies.

However, if the noise temperature is much lower (high gain antenna with clean pattern pointed at cold sky), reducing the loss will have a much greater effect. This is why EME types will spend lots of money just to lower the noise figure by another tenth or two--it may actually translated into full dB of signal to noise ratio.

This may significantly reduce the investment per station worked.

e.g. \$2000/5stns= \$400/station (\$2000+\$300)/10stns=\$230/station.

--

Zack Lau KH6CP/1 2 way QRP WAS

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Internet: zlau@arrl.org 10 grids on 2304 MHz

Date: 17 Oct 1994 19:38:17 GMT
From: wilkins@convex.com (Richard Wilkins)
Subject: Ventenna???

Some time ago there was a company advertizing a product called Ventenna, I believe. There was a 2m, 440 and dual band version. It was designed to hide on the vent stacks of homes and look like just a longer vertical plumbing vent.

What are folks experiences with this antenna?

Does this company still exist? Contact info?

Dick NOTUT

--

Dick Wilkins CONVEX Computer Corporation
Internet: wilkins@convex.com P.O. Box 833851
Phone: (214)497-4350 3000 Waterview Parkway
FAX: (214)497-4441 Richardson, TX 75083-3851

Date: Mon, 17 Oct 1994 17:55:08 GMT
From: rheiss@harp.aix.calpoly.edu (Robert Everitt Heiss)
Subject: Verticals, rate them

In article <130CT199414503164@ewir-wr> soderman@ewir-wr writes:
>I've got an old Hustler 4BTM vertical trap from my novice days many years ago,
>[...]
>Additional info...I just purchased a Yaesu 990, so the antenna tuner is
>built-in, but I'm limited to coax, I guess. I'd prefer to work with coax,
>anyway, in spite of the multiband advantages of open wire. Any suggestions?

While you still have that 4BTM, I'd be interested to hear how it works
on 80 and 30 meters with a tuner. Ground mounted might be best.

Date: Mon, 17 Oct 1994 12:46:18 +0000
From: G3SEK@ifwtech.demon.co.uk (Ian G3SEK)

References<1994Oct5.140644.23655@arrl.org> <373266\$30m9@info2.rus.uni-stuttgart.de>, <682014245wnr@ifwtech.demon.co.uk>
Reply-To: G3SEK@ifwtech.demon.co.uk
Subject: Re: VHF/UHF DX book

RSGB have supplied details for ordering The_VHF/UHF_DX_Book from the USA. All prices are in UK pounds (L), currently worth about \$1.50.

Per copy: L18.00 to non-members (members' price L15.30)
Surface mail: L1.75 for 1 copy, L3.50 for two
Airmail: L7.16 for 1 copy

RSGB Books accept Visa, MC, Amex and DC. Although we in Britain can get a very fair exchange rate when buying from the USA by credit card, with no commission charge for the currency exchange, your mileage in the opposite direction may vary - check with your credit card company (and please let me know for future information).

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Note - I have no financial connection with either RSGB Books or DIR Publishing. I'm only passing along the information that RSGB gave to me.

73 from Ian G3SEK Abingdon, England g3sek@ifwtech.demon.co.uk	Editor, <u>The_VHF/UHF_DX_Book</u> "In Practice" columnist for RadCom (RSGB)
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Date: 17 Oct 1994 11:05:53 GMT
From: moritz@ipers1.e-technik.uni-stuttgart.de ()

References<37kvvb\$cn2@nntp1.lkg.dec.com> <37lmsm\$2rca@info2.rus.uni-stuttgart.de>, <37p10m\$6as@nntp1.lkg.dec.com>

Subject: Re: 2m quad construction - help!

>Well I don't know of any other 1/2 wavelength antennas that give that kind
>of gain. A 7 element yagi is going to twice as long. And for doubling
>the length it only gives 2 dB more gain? ;-)

Todd,

It is not so much the material for the boom than for the elements that tend to cost, if you use a wooden boom. There the yagi gives you two db FREE. Doubling the boom length usually gives about 2.5dB gain. So if a small turning radius is a must, stacking short yagis will still be betterthan tha 4 ele quad.

The point is, that the cubical quad certainly is a winner, But as you add more elements or going to the "Quagi" it is loosing against a proper yagi in terms of performance per effort.

73, Moritz DL5UH

End of Ham-Ant Digest V94 #349
